UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,750	03/29/2004	Ching-Wei Chang	J-SLA.1558	5471

		EXAMINER
7590 06/06/2005		BLACKMAN, ANTHONY J

Robert D. Varitz
ROBERT D. VARITZ, P.C.
2007 S.E.Grant Street
Portland, OR 97214

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/812,750	CHANG, CHING-WEI
	Examiner	Art Unit	
	ANTHONY J BLACKMAN	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*29 March 2004*</u>.

2a)☐ This action is **FINAL.** 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>*3/29/04*</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1, 3, 5-7 and 9-10 are rejected under 35 U.S.C. 102(e) as being

anticipated by CHANG, US Patent No. 6,753,978.

3.   As per claim 1, examiner interprets CHANG et al teach the following features

and limitations, "A method for controlling color bleed in relation to a system-invoked

halftone color-image process which involves the practice of error diffusion (col 1, lines

5-8), said method comprising

selecting a location in the system which is downstream therein relative to where

such error diffusion takes place (column 1, lines 44-67 is a "common technique"),

at that selected location, performing diffusion-accumulated error calculation (col 4, lines

1-14),

at another location in the system which is downstream from where said

performing takes place (col 4, lines 20-26 show one point or location in figure 2 along

the path of the adjustment factor, adjacent adjustment factors represent multiple points

and locations for another or a second or multiple locations), applying error filtering to

define a numerically weighted pixel-neighbor distribution pattern for such calculated

accumulated error (col 4, lines 20-26 show one point or location in figure 2 along the

path of the adjustment factor, adjacent adjustment factors represent multiple points and

locations for another or a second or multiple locations), where the numbers .

associated with that pattern add to a defined distribution-weight totality number

(moving along the adjustment factor path, numbers are added as shown in the

threshold decision loop of fig 1, further, the intersection of fig 2 shows one location of

the adjustment factor path, and further still, figure 3 shows adjustment factors (locations

of multiple adjustment factors) along the entire adjustment factor path in addition to the

previous explanation at col 4, lines 20-26 show one point or location in figure 2 along .

the path of the (boundary) adjustment factor, adjacent adjustment factors represent

multiple points and locations for another or a second or multiple locations that adjust

the boundary for the threshold decisions), and

then preparing, for use in a next-pixel error-diffusion event (the next or closest or

neighbor or adjacent pixel or adjacent event are analogous to points along the

(boundary) adjustment factor path disclosed above col 4, lines 20-26 and 29-34) , a

chosen distribution-

weight totality number (finally, col 5, lines 15-25 show a selector means of the threshold decision loop of fig 1-representing any point along the boundary adjustment path described above in fig 2 at the intersection and fig 3 along the boundary adjustment path) which is less than the defined distribution-weight totality number (finally, fig 3, col 5, lines 15-25 show a selector means of the threshold decision loop of fig 1 adjusts anywhere along the boundary adjustment path of fig 3 above or below the threshold shown in figure 1).

4.   As per claim 3, CHANG meets limitations of claim 1, including, wherein said applying is done using a Floyd and Steinberg error filter (col 2, lines 22-25 shows use of (1) Floyd and Steinberg filtering) . It would have been obvious to one skilled in the art at the time of the invention to modify fig 1 step 12 (threshold decision means)to equal one in order to obtain the best adjustment(s) that are close to one, (that is, 15/16). Therefore, using this method would improve quality of the output image ((pattern) and improve the cost of the halftoning processor (see col 2, lines 13-19) without adversely impacting image quality or unduly complicating the halftoning processor.

5.   As per claim 5, CHANG meets limitations of claim 1, including, wherein said applying is done using an error filter which is one of a (1) Floyd and Steinberg filter, (2) a Jarvis, Judice and Ninke filer, and (3) a Stucki filter (column 5, lines 22-25 discloses (1) use of Floyd and Steinberg filtering). It would have been obvious to one skilled in the art at the time of the invention to modify fig 1 step 12 (threshold decision means)to

equal one in order to obtain the best adjustment(s) that are close to one, (that is, 15/16).

Therefore, using this method would improve quality of the output image ((pattern) and

improve the cost of the halftoning processor (see col 2, lines 13-19) without adversely

impacting image quality or unduly complicating the halftoning processor.

6.   As per claim 6, CHANG meets limitations of claim 1, wherein color error diffusion

takes the form of vector error diffusion (col 3, lines 49-61). It would have been obvious

to one skilled in the art at the time of the invention to modify fig 1 step 12 (threshold

decision means)to equal one in order to obtain the best adjustment(s) that are close to

one, (that is, 15/16). Therefore, using this method would improve quality of the output

image ((pattern) and improve the cost of the halftoning processor (see col 2, lines 13-

19) without adversely impacting image quality or unduly complicating the halftoning

processor.

7.   As per claim 7, CHANG meet limitations of claim 6, wherein said applying is done

using an error filter which is one of a (1) Floyd and Steinberg filter, (2) a Jarvis, Judice

and Nirlke filter, and (3) a Stucki filter (col 5, lines 22-25 show use of (1) Floyd and

Steinberg filtering). It would have been obvious to one skilled in the art at the time of the

invention to modify fig 1 step 12 (threshold decision means)to equal one in order to

obtain the best adjustment(s) that are close to one, (that is, 15/16). Therefore, using this

method would improve quality of the output image ((pattern) and improve the cost of

the halftoning processor (see col 2, lines 13-19) without adversely impacting image

quality or unduly complicating the halftoning processor.

8.   As per claim 9, CHANG meets limitations of claim 6, including, wherein said

applying is done using a Floyd and Steinberg error filter (col 2, lines 22-25 show use of

(1) Floyd and Steinberg filtering). It would have been obvious to one skilled in the art at

the time of the invention to modify fig 1 step 12 (threshold decision means)to equal one

in order to obtain the best adjustment(s) that are close to one, (that is, 15/16).

Therefore, using this method would improve quality of the output image ((pattern) and

improve the cost of the halftoning processor (see col 2, lines 13-19) without adversely

impacting image quality or unduly complicating the halftoning processor.

9.   As per claim 10, CHANG meet limitations of claim 9, including wherein the

mentioned chosen distribution-weight totality number is 15/16 of the mentioned defined

distribution-weight totality number ((examiner's interpretation of the "chosen distribution-

weight totality number" is similar to the data points that are selected (selector 30) and

then manipulated by the Transformation functions (fig 1, elements 28 and 32), then .

adjusted by the boundary adjustment filtering (fig 1, elements 24 and 34) and compared

to the Threshold Decision 12 to obtain (for example, if Threshold = 1) the closest value

to 1. It would have been obvious to one skilled in the art at the time of the invention to

modify fig 1 step 12 (threshold decision means)to equal one in order to obtain the best

adjustment(s) that are close to one, (that is, 15/16). Therefore, using this method would

improve quality of the output image ((pattern) and improve the cost of the halftoning

processor (see col 2, lines 13-19) without adversely impacting image quality or unduly

complicating the halftoning processor.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims 2, 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable

over CHANG, US Patent No. 6,753,978.

12.   As per claim 2, CHANG teach limitations of claim 1, including, wherein the

mentioned chosen distribution-weight totality number is 15/16 of the mentioned defined

distribution-weight totality number (examiner's interpretation of the "chosen distribution-

weight totality number" is similar to the data points that are selected (selector 30) and

then manipulated by the Transformation functions (fig 1, elements 28 and 32), then

adjusted by the boundary adjustment filtering (fig 1, elements 24 and 34) and compared

to the Threshold Decision 12 to obtain (for example, if Threshold = 1) the closest value

to 1. However, *CHANG does not expressly teach the means of the "mentioned chosen*

distribution-weight totality number is 15/16 of the mentioned defined distribution-weight

totality number" as claimed. It would have been obvious to one skilled in the art at the

time of the invention to modify fig 1 step 12 (threshold decision means)to equal one in

order to obtain the best adjustment(s) that are close to one, (that is, 15/16). Therefore,

using this method would improve quality of the output image ((pattern) and improve the

cost of the halftoning processor (see col 2, lines 13-19) without adversely impacting

image quality or unduly complicating the halftoning processor.

13.   As per claim 4, claim 4 is substantially similar to claim 1.

14.   As per claim 8, claim 8 is substantially similar to claims 2 and 4.

Conclusion

15.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. LAU et al, US Patent No. 6,798,537 discloses closely related

subject matter to the instant application referring to digital halftoning with error diffusion

vector green-noise masks. DAMERA-VENKATA, US Patent Application Publication,

Pub. No. 2003/0038953 discloses a color error diffusion process. BOWERS, US Patent

No. 5,130,823 disclose digital halftone systems using error diffusion. FRIEDMAN et al,

US Patent No. 5,455,600 disclose error diffusion.

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ANTHONY J BLACKMAN whose telephone number is

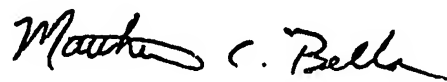571-272-7779. The examiner can normally be reached on FLEX SCHEDULE.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

ANTHONY J BLACKMAN
Examiner
Art Unit 2676

***

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600